1 **CATHODE RAY TUBE CIRCUITS**
3 .Combined cathode ray tube and circuit element structure
3.5 ..Traveling wave tube with delay-type transmission line
3.6 ...Line with plural characteristics or plural lines
4 ..Inductor or distributed parameter-type inductive structure
5 ...Ray passes in or through a hollow distributed parameter device
5.11 ....With a secondary emission stage
5.12 .....Secondary emission passes through or in the hollow device
5.13 ....With a magnetron
5.14 ....Plural rays pass through or in the hollow device
5.15 .....Rays merged at the hollow device
5.16 .....Plural hollow devices
5.17 ......Feedback by ray
5.18 ....Ray returns to the hollow device; e.g., reflex type
5.19 .....By same path and/or to same aperture
5.21 ......Device tunable
5.22 ....Device has a flexible wall
5.23 ....Thermally controlled
5.24 ....Deflecting or reflecting the ray
5.25 .....Ray sweeps over an aperture or slot in the hollow device
5.26 .....Device deflects the ray
5.27 ......Plural hollow devices
5.28 .....Plural hollow devices
5.29 ....Ray has appreciable transverse electrical dimension and/or significant shape
5.31 .....Hollow ray
5.32 .....Disk-shaped ray
5.33 ....Device also a ray anode or cathode
5.34 ....Focusing and/or concentrating the ray
5.35 .....By magnetic field
5.36 ....Device removable from its grids
5.37 ....Device has particular grid structure
5.38 ....With particular collector or anode structure
5.39 ....Plural hollow devices
5.41 .....Accelerating or decelerating the ray between the hollow devices
5.42 .....Devices excited to accelerate the ray across their gaps; e.g., synchrotrons
5.43 .....Devices of different resonance frequency
5.44 .....Feedback connection between the hollow devices
5.45 ......Three hollow devices
5.46 .....Device tunable
5.47 ......Gang tuned hollow devices
5.48 ......Device has a flexible wall
5.49 .....Three hollow devices
5.51 ....Plural gaps in the hollow device
5.52 ....Device has a re-entrant portion surrounding the ray
5.53 ....Device tunable
5.54 .....Device has a flexible wall
7 ...Connected to the deflecting electrodes
8 .Compensating for stray deflecting fields
8.51 .Pulse storing
8.61 ..Plural cathode-ray tubes or ray-type tubes
9 .Plural cathode-ray tubes in the circuit
10 .With radiant energy sensitive control means
11 ..With secondary emission stage in the cathode-ray tube
11.5 ...Color convergence controlled by photodetector
12.1 .With secondary emission stage in the cathode-ray tube
13.1 .Plural ray-type tube
13.11 ..Storage tubes
14 .Plural concentrating, accelerating, and/or de-accelerating stages
15 ..Three or more stages
16 ...Intermediate stage at lower potential

17 ..With ray-deflecting stage interposed between plural concentrating or accelerating and/or de-accelerating stage or co-extensive with one such stage
364 .Cathode-ray deflections circuits
365 ..Symbol generator
366 ..For flat cathode-ray tube
368.11 ..Including color convergence control
368.12 ...Including specified signal storage (e.g., memory, register, etc.)
368.13 ....Interpolation
368.15 ...Including electrostatic element (e.g., electrode, lens, etc.)
368.16 ....Offset apertures in plural sequential electrodes
368.17 ...Including signal delay circuitry
368.18 ...Including specified waveform generating circuitry
368.19 ....By nonlinear device (e.g., square law device, diode, etc.)
368.21 ....Parabolic waveform
368.22 .....By integrating of signal
368.23 .....By multiplying of signal
368.24 ...Static convergence feature
368.25 ...Including core or winding structure
368.26 ....Adjacent to or integral with deflection winding or housing structure therefor
368.27 ...Including particular magnetic field distribution
368.28 ...Including plural cores or coils
367 ..Including a digital-to-analog device
369 ..Target controls deflection circuit
370 ..With ray deflection distortion correction or reduction
371 ...By modulation of deflection waveform
372 ..For cathode-ray tube having plural targets
373 ...Targets radially about cathode
374 ...Targets in single plane
375 ..For plural phosphor target tube
376 ...With post deflection phosphor selection
377 ..With marker
378 ..Circular, spiral, or radial sweeps
379 ..With additional control of cathode ray
380 ...Control only at turn-on or turnoff of circuit
381 ....Circuits control grid-cathode circuit of tube
382 ...With focusing of ray
382.1 ....For television
383 ...Intensity control of ray
384 ....Ray blanking
385 ....Ray unblanking
386 ....With ray control responsive to deflection circuit
387 ..Including feedback circuit
388 ...Plural feedback circuits
389 ...Negative feedback
390 ....Tube-type circuit
391 ..Plural deflection circuits
392 ...Plural waveform display circuits
393 ...Interconnected sweep circuits
394 ...Plural deflections in one plane
395 ..Plural potentials or currents applied to deflection member
396 ...Push-pull deflection circuit
397 ....Coil-type circuit
398 ...With cathode-ray centering
399 ..Deflection coil circuit
400 ...Including a saturable element
401 ...Including a temperature responsive element
402 ...Including a voltage dependent resistor
403 ...Including an amplifier
404 ....Tube-type amplifier
405 .....With transformer connecting amplifier to coil
406 ......With power recovery circuit
407 .....With diode or amplifier across coil
408 ...Including solid-state switch
409 ..Including a discharge device
410 ...With device discharging a condenser
30 .Ray modulation
411 .Power supply from deflection circuit source

500 **HIGH ENERGY PARTICLE ACCELERATOR TUBE**
501 .Magnetic field acceleration means
502 ..Cyclotron
503 ..Synchrotron
504 ..Betatron
505 ..Linear accelerator (Linac)
506 .Electrostatic accelerator means
507 .With injection or extraction means
32 **COMBINED LOAD DEVICE OR LOAD DEVICE TEMPERATURE MODIFYING MEANS AND ELECTRICAL CIRCUIT DEVICE STRUCTURE**
33 .Portable self-contained
34 .With antenna
35 .Plural discharge device loads
36 ..Series connected discharge devices
37 ..Cathode-anode circuit connected to the discharge control electrode of another discharge device load (e.g., cascade)
38 ..Corresponding electrodes connected by a circuit impedance (e.g., push-pull)
39 .Discharge device load with distributed parameter-type transmission line (e.g., wave-guide, coaxial cable)
39.3 ..Traveling wave type with delay-type transmission line
39.51 .Distributed parameter resonator-type magnetron
39.53 ..With output-coupling means
39.55 ..Variable tuning
39.57 ...Electron emission type
39.59 ...Thermal or magnetic actuator
39.61 ...Movable tuning element (e.g., slug)
39.63 ..With control electrode, secondary emitter, or auxiliary anode or cathode
39.65 ..Having diverse size resonators
39.67 ..Tubular anode with eccentric or axially displaced cathode
39.69 ..With strapping for resonant structure
39.71 ..Magnetic field generating and pole structure
39.73 ..Interdigital electrode
39.75 ..Anode with plural cavities
39.77 ..With resonant cavity coupled to anode
40 .Electrode formed as inductive impedance
41 .Inductive impedance connected between electrodes of a discharge device load
42 ..Connected to plural anodes or plural cathodes
43 ..Connected to control electrode
44 ...With capacitive impedance connected to the control electrode
45 ..With diverse-type impedance
46 .Filament, electric heater, or resistance in shunt with the discharge electrodes of a discharge device load
47 ..Automatic switch in the shunt circuit
48 ..Cathode or cathode heater in the shunt circuit
49 .Filament or electric heater in series with a discharge device load
50 .Load device temperature-modifying means combined with or forming circuit impedance means
51 .Plural circuit elements
52 ..Plural impedance elements
53 ...Diverse types of impedances
54 ...Plural inductive impedances
55 .Electric generator or piezoelectric device
56 .Discharge device load
57 ..Discharge device and transformer
58 ..Discharge device and circuit impedance
59 ...Impedance connected between two electrodes
60 ....Impedance connected to an auxiliary starting electrode
61 ....Discharge control discharge device
62 ...Inductive impedance
63 ..Discharge control discharge load
64 .Multiple filament load devices
65 ..Automatic substitution of the filament
66 ..Series connected filaments
67 ..Diverse resistance filaments
68 ..Three or more controlled filament circuits

69 ..Plural filaments energized in parallel
70 .Load device and transformer
71 .Load device and impedance
72 .Load device and periodic electric switch
73 .Electric switch inside evacuated or gas filled envelope
74 .Automatic shunt circuit closing or cut-out switch
75 ..Shunt circuit closing
76 **SPECIAL APPLICATION**
77 .Vehicle
78 ..Vehicle motor or vehicle motion driven generator
79 ..Vehicle or engine speed controlled
80 ..Load device controller combined with vehicle controller
81 ...Steering mechanism controlled
82 ..Head light systems
83 ...Alternate circuit closing
84 .Door or closure controlled load device
84.51 **PULSE STORING SYSTEMS OF THE GASEOUS DISCHARGE-TUBE TYPE**
84.61 .With plural cathode or anode tube
85 **WITH ELECTROMAGNETIC WAVE RADIATION PREVENTING OR SHIELDING MEANS**
86 **AUTOMATIC SUBSTITUTION OF THE POWER SUPPLY**
87 .With load device or electrode substitution
88 **AUTOMATIC SUBSTITUTION OF THE LOAD DEVICE OR ELECTRODE**
89 .Plural substitution of load devices or electrodes
90 .Plural load devices with selective substitution of load device or electrode
91 .Over-voltage or over-current controlled substitution
92 .Diverse-type load device or electrode substituted
93 .With current shifting switch
94 **WITH CATHODE OR CATHODE HEATER SUPPLY CIRCUIT**
95 .Plural load device systems
96 ..Series connected cathodes or heaters
97 ..Pulsating or A.C. supply to the cathode or heater circuit
98 .Plural cathodes or heaters in the load device
99 ..Series connected cathodes or heaters
100 ...Thermostatic switch in the series circuit
101 .Discharge device and/or rectifier in the cathode or heater circuit
102 .Delayed application of the discharge potential
103 ..With surge generator in the discharge circuit
104 ..Thermostatic controlled delaying means
105 .Pulsating or A.C. supply to the cathode or heater circuit
106 ..Automatic cut-out or voltage regulator in the cathode or heater circuit
107 .Automatic cut-out or voltage regulator in the cathode or heater circuit
108 **CONFINED GAS OR VAPOR-TYPE LOAD DEVICE WITH PRESSURE REGULATING MEANS**
109 .Auxiliary discharge type
110 .Valve controlled
111.01 **DISCHARGE DEVICE LOAD WITH FLUENT MATERIAL SUPPLY TO THE DISCHARGE SPACE**
111.11 .With tangential fluent material supply
111.21 .Plasma generating
111.31 ..With extraction electrode
111.41 ..With magnetic field
111.51 ...Induction type
111.61 ...Acceleration
111.71 ...Plasma containment
111.81 .Electron or ion source
111.91 ..Gas ionization type (e.g., ion pump or gauge source)
112 **WITH LOAD DEVICE TEMPERATURE MODIFIER**
113 .Plural load device systems
114 ..Electric heater for the load devices
115 .Electric heater for the load device
116 ..Automatic cut-out or voltage regulator for the heater circuit
117 .Automatic control of the temperature modifier

118 .Load device circuit controlled by the temperature modifying medium
119 **WITH AUTOMATIC SHUNT AND/OR CUTOUT**
120 .Combined with signal, indicator, or alarm
121 .Plural load device systems
122 ..Series connected load devices
123 .Plural shunts and/or cut-outs
124 .Auxiliary electrode controlled
125 .Shunt circuit closing
126 ..With compensating impedance
127 .Supply circuit current and/or potential actuated switch
128 ..Plural switch operating means
129 **WITH SIGNAL, INDICATOR, OR ALARM**
130 .Plural load device systems
131 ..Selective indication of the load device
132 ...Plural signals, indicators, or alarms
133 .Plural signals, indicators, or alarms
134 .Radiant energy responsive control type
135 .Discharge device and/or rectifier in the signal circuit
136 .Electrically operated switch controlling the signal circuit
137 **POLYPHASE A.C. SUPPLY**
138 .M phase to N phase (e.g., phase splitters)
139 ..Polyphase supply circuit
140 ...Phase multiplying
141 .Transformer in the supply circuit
142 ..With interphase transformer in the supply circuit
143 ..Convertible transformer connections
144 ..Plural load devices
145 ..Plural cathode and/or anode load device
146 .Plural discharge control discharge device load devices
147 .Plural cathode and/or anode discharge device load
148 ..Discharge control discharge device
149 **WITH RADIANT ENERGY SENSITIVE CONTROL MEANS**
150 .Radiant energy responsive load device
151 .Load device irradiating the radiant energy responsive device
152 .Plural load devices
153 ..Selective energization of the load devices
154 ...Selective electric switch controlled by the radiant energy responsive device
155 .Plural radiant energy responsive devices
156 .Radiant energy control of an electric discharge device in the supply circuit of the load device
157 .Discharge control discharge device load controlled by the radiant energy responsive device
158 .Radiant energy controlled regulation of the current supply for the load device
159 .Electric switch controlled by the radiant energy responsive device
160 **PLURAL POWER SUPPLIES**
161 .Plural load devices
162 ..Diverse type load devices
163 ...Simultaneous application of diverse type current supplies to a load device
164 ..Series connected current supplies
165 ..Diverse type current supplies
166 ...Simultaneous application to a load device
167 .Plural cathode and/or anode load device
168 ..Diverse type current supplies to auxiliary and principal electrodes
169.1 ..Diverse-type energizing or bias supplies to different electrodes
169.2 ...Including shifting of register, counter, or display
169.3 ...Electroluminescent device
169.4 ...Gas display panel device
170 .Series connected current supplies
171 .Discharge device and/or rectifier in one of the supply circuits
172 .Periodic switch in one of the supply circuits

223 ..Condenser or inductance in the primary circuit
224 .Impedance or current regulator in the supply circuit
225 .Periodic switch cut-out
226 .Plural periodic switches or multiple contact periodic switch
209 T .Transistorized ignition systems
209 CD .Capacitor dischargeneous ignition systems
209 M .Miscellaneous ignition systems
209 PZ .Piezoelectric ignition systems
209 SC .Silicon controlled rectifier ignition
227 R **CONDENSER IN THE SUPPLY CIRCUIT**
228 .Plural load device systems
229 ..Condenser connected to plural cathodes or anodes of asymmetrical discharge device loads
230 ..Discharge control discharge device loads
231 ..Plural series connected condenser and load device circuits
232 ..Condenser in shunt to load and supply
233 .Plural cathode and/or anode discharge device load
234 ..Condenser in the auxiliary starting electrode circuit
235 ..Condenser connected to plural cathodes or anodes
236 .Electromagnetic influenced discharge device load
237 .Discharge control discharge device load
238 ..Condenser in the control circuit
239 .Transformer in the condenser load device circuit
240 .Electric switch in the condenser circuit
241 R .Condenser in shunt to the load device and the supply
242 ..With an inductance in the circuit
243 ...Inductance in series with the load device and the supply
241 P ..Photoflash
241 S ..Strobe lights
244 .Inductance in the condenser circuit
245 .Resistance in the condenser circuit
227 A .Arc machining
246 **PULSATING OR A.C. SUPPLY**
247 .With power factor control device
248 .Induction-type discharge device load
249 .Potential node-type discharge device load
250 .Plural load device systems
251 ..Inverse parallel connected asymmetrical discharge device loads
252 ..Discharge control discharge device loads
253 ..Full wave systems with asymmetrical discharge device loads
254 ..Transformer in the supply circuit
255 ...Plural transformers in the supply circuit
256 ....Primaries in series
257 ...With plural secondary or tapped secondary
258 ..Inductance in the supply circuit
259 ...Variable inductance
260 .Plural cathode and/or anode discharge device load
261 ..Auxiliary starting electrode-type discharge device load
262 ...Transformer or auxiliary winding in the auxiliary electrode circuit
263 ...Inductance or potential surge generator in the auxiliary electrode circuit
264 ...Impedance in the auxiliary electrode circuit
265 ..Full wave-type system
266 ...Transformer in the supply circuit
267 .Electromagnetic influenced discharge device load
268 .Discharge control discharge device load
269 ..With plural discharge control devices
270 ..Plural control potentials
271 ...Plural pulsating and/or A.C. potentials
272 ..Rectifier and/or discharge device in the control circuit

273 ...With condenser in the control circuit
274 ..Transformer in the control circuit
275 ..Condenser in the control circuit
276 .Transformer in the supply circuit
277 ..Plural transformers in the supply circuit
278 ..Three or more coil-type transformers
279 ..Current regulator in the primary circuit
280 ..Convertible to inductance
281 ..Relatively movable core and coil-type transformer
282 ..Regulating transformer
283 .Inductance in the supply circuit
284 ..Variable inductance
285 ...Relatively movable core and coil-type inductance
286 ....Biased movable part with supply current controlled movement
287 .Periodic-type current and/or voltage regulator in the supply circuit
288 **THREE OR MORE WIRE DISTRIBUTION SYSTEMS**
289 **SURGE GENERATOR OR INDUCTANCE IN THE SUPPLY CIRCUIT**
290 .Circuit interrupter in the inductance circuit
291 **CURRENT AND/OR VOLTAGE REGULATION**
292 .Keyboard operated or pattern controlled regulator
293 .Pre-selectable regulator systems
294 .Plural load device regulation
295 ..Regulator selectively connectable to plural circuits
296 ..Inverse control of load devices
297 ..Automatic regulation
298 ..Mechanically connected regulators
299 .Plural regulators
300 ..Current generator control
301 ..Plural automatic regulators
302 .Current generator control
303 ..Control of the prime mover
304 ..Plural field-type generator
305 ...Three or more fields
306 .Regulator in shunt to the load device
307 .Automatic regulation
308 ..Regulator responsive to plural conditions
309 ..Thermal responsive regulator
310 ..Shunted impedance-type regulator
311 ..Variable impedance-type regulator
312 **PLURAL LOAD DEVICE SYSTEMS**
313 .Electric switch in the supply circuit
314 ..Pre-selectable switching systems
315 ...Electrically controlled load device switch
316 ..Keyboard or pattern controlled switch
317 ..Three or more controlled load device circuits
318 ...Group control systems
319 ....Four or more groups
320 ..Plural switches
321 ...Master circuit closing switch
322 ..Alternate circuit closing
323 .Sequential starting
324 .Plural discharge device loads
325 ..Discharge control discharge device loads
326 **DISCHARGE DEVICE LOAD**
327 .Discharge drawing-type discharge device
328 ..Tilting discharge device
329 ...Electrically controlled tilting
330 ..Auxiliary starting electrode type
331 ...Movable auxiliary starting electrode
332 ....Automatic switch in the electrode moving device circuit
333 ..Automatic cut-out for the electrode moving device circuit
334 .Plural cathode and/or anode discharge device load
335 ..Auxiliary starting electrode-type discharge device
336 ...Plural auxiliary starting electrode
337 ..Diverse potentials for the discharge electrodes
338 ..Electromagnetic influenced discharge device
339 ..Discharge control discharge device load

340 .With de-ionizing means in the cathode-anode circuit
341 .With plural discharge control devices
342 ..Diverse types
343 ..Plural electromagnetic devices
344 .Electromagnetic influenced discharge device
345 ..Rail-type discharge device load
346 ..Plural current supply to the electromagnet
347 ..Series connected with the load device
348 ..Pulsating or A.C. supply to the electromagnet
349 .Discharge control discharge device load
350 ..Plural control currents and/or potentials
351 ...Plural pulsating or A.C. currents and/or potentials
352 ..Rectifier and/or discharge device in the control circuit
353 ...With condenser in the control circuit
354 ..Transformer in the control circuit
355 ..Condenser in the control circuit
356 ...Inductance in the control circuit
357 .Movable electrode discharge device
358 .Plural gases or vapors in the discharge device
359 **PYRO-ELECTRIC DEVICE LOAD**
360 **TIME-CONTROLLED**
361 **PLURAL CONTROL STATIONS**
362 **ELECTRIC SWITCH IN THE SUPPLY CIRCUIT**
363 **MISCELLANEOUS SYSTEMS**

DIG 1 **FLUORESCENT LAMP CIRCUITS WITH MORE THAN TWO PRINCIPLE ELECTRODES**
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